

## ABSTRACT OF THE DISCLSOURE

Methods to detect and characterize a defect in a fiber preform residing in a molding cavity for liquid composite molding (e.g. resin transfer molding) to make a composite component or structure. The defect may result from fiber preform misplacement in the molding cavity, accidental inclusions, preform density variations, and/or distortion of the preform. Gas pressures at multiple locations on a mold wall are measured during gas flow through the mold cavity containing the fiber preform. Normalized or measured pressures are analyzed by discriminant analysis to detect and characterize any defect in the tested fiber preform.